

Balloon, powered

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The following describes tentative requirements or desired operational characteristics of powered lighter-than-air vehicles as it is now planned they be utilized. They must be regarded as tentative and are considered at this time only as a possible aid in the emphasis on certain areas of the general research effort. It is desired that these characteristics be discussed fully at this time and at such time as all parties concerned with this effort are in agreement the desired characteristics will be set forth in final form and may serve as one of the major considerations in directing the remainder of the effort.

Two general operating characteristics are envisioned at this time that will probably result in two types of lighter-than-air vehicles. One, a very high altitude, long "range" vehicle capable of extended flight duration. Number two is a a minimum size, comparatively high speed, "low" altitude vehicle.

No. I - "High altitude: long range"

	Minimum Useful	Desired	Probable Max.
Payload (lbs)	100	200-400	1000
Time at alt. without power (days)	3	7 - 10	30
Cruising range <i>Over</i> (mi) - power on	110	400 - 700	--
Sea level max speed (knots)	25	45 - 55	--
<i>Low altitude</i>	<i>40K</i>	<i>50-80</i>	

Other requirements for #I: Minimum optical and radar target
Capable of unmanned directed flight
(directed remotely over approx. two-thirds of the cruising range) altitude, power on and off heading
Minimum ground facility for launching (space, personnel, installations)

No. II - High speed, low altitude, short range

	Minimum Useful	Desired	Probable Max.
Payload (lbs.)	400	400 - 700	1000
Cruising altitude	7,000	7 - 10,000	15,000
Time at alt. <i>Over</i>	<i>2</i>		
Power off (hours)			

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	Minimum Useful	Desired	Probable Max.
Cruising range - power on (mi)	100	100-500	---
Maximum speed at sea level	30	50 - 80	---

- Other requirements for #II:
- (1) The vehicle will be manually operated
 - (2) Very high degree of stability and control
(must maneuver close to the ground,
while the payload is decreased by
as much as two thirds
 - (3) Must be able to operate completely during
the hours of darkness
 - (4) Minimum radar target
 - (5) Minimum "audio" target
- (a visual problem is not anticipated at
altitudes during the hours of darkness)

These outline in general terms the tentative operating characteristics. It is recognized that this subject has not been exhausted and it is planned that final type requirements will be set forth at a later date pending agreement by all concerned.

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